

Superstreets

“A Tool for Safely and Efficiently Managing Congestion”



**Prepared for
North Carolina Department of Transportation
Transportation Mobility and Safety Division**



**By
Stantec Consulting Services Inc.**



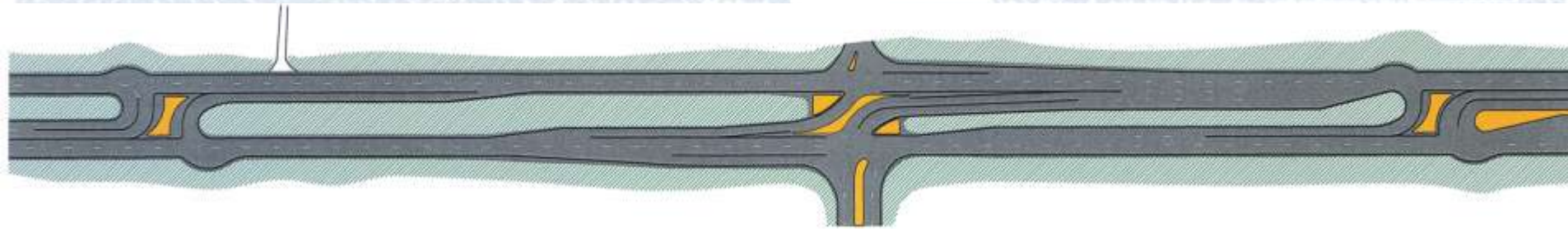
NC Department of Transportation

Mission Statement

“Connecting people and places in North Carolina - safely and efficiently with accountability and environmental sensitivity.”



The Superstreet



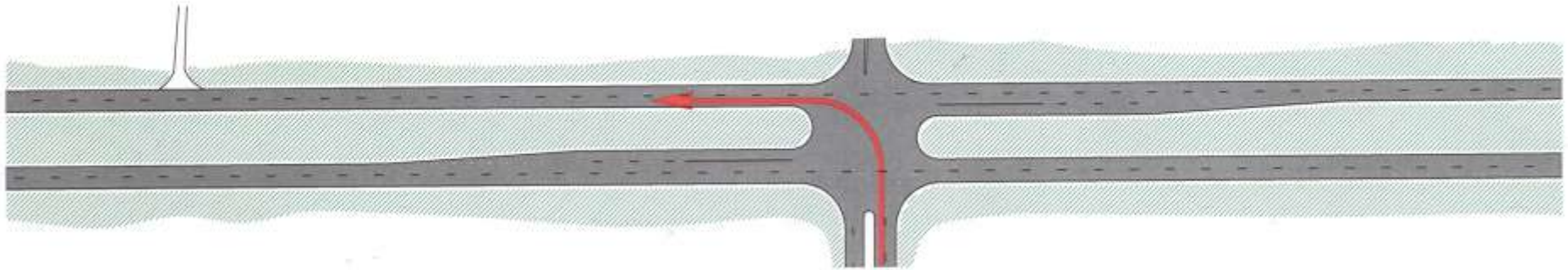
- A type of intersection in which minor cross-street traffic is prohibited from going straight through or left at a divided highway intersection.

- Minor cross street traffic must turn right, but can then access a U-turn to proceed in the desired direction.

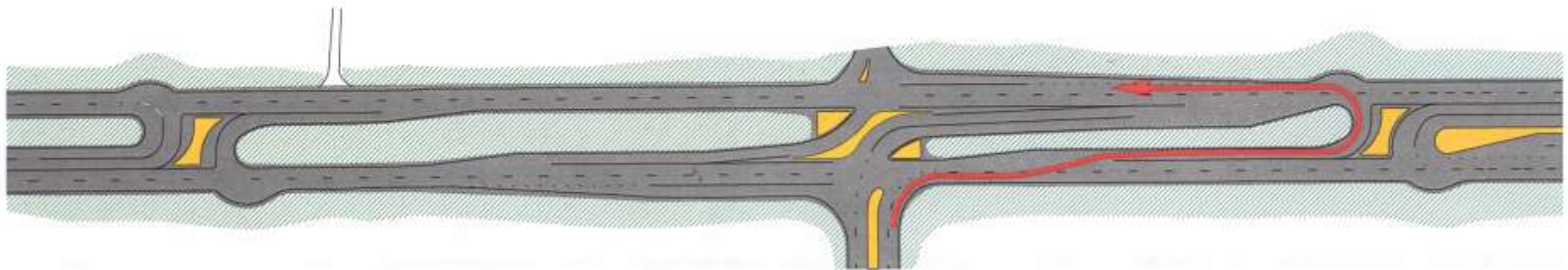
*Other configurations possible based on site specific conditions.



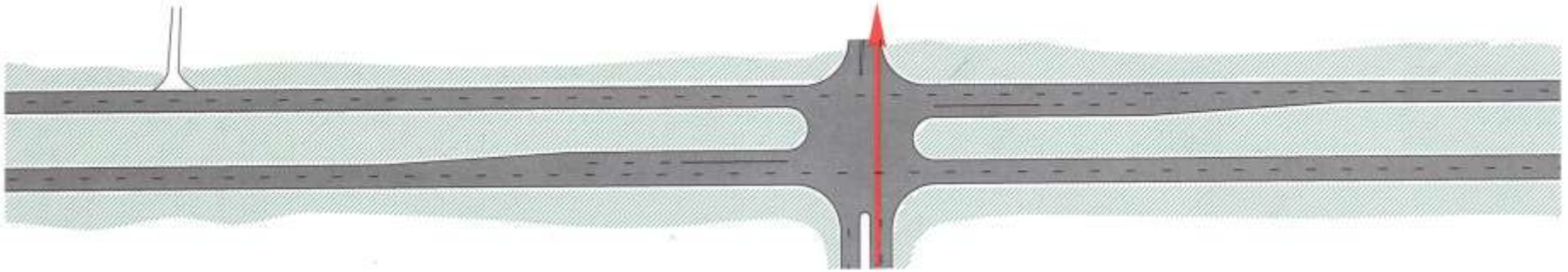
CONVENTIONAL INTERSECTION



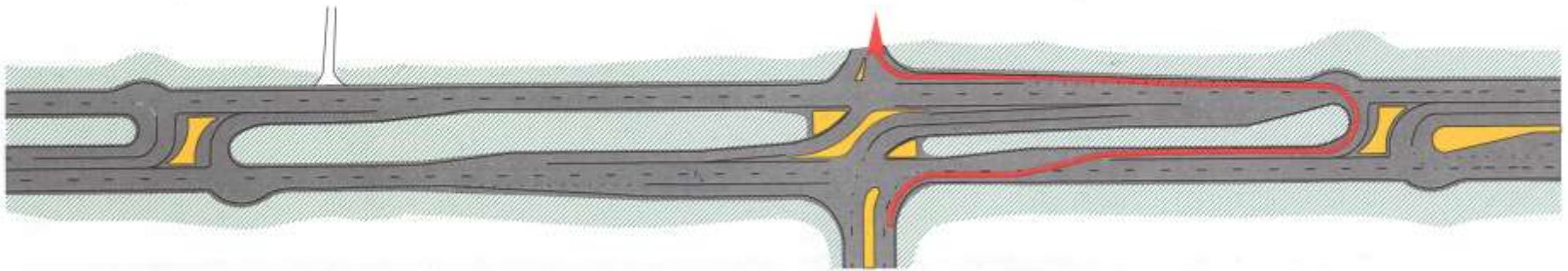
SUPERSTREET



CONVENTIONAL INTERSECTION



SUPERSTREET



Why Superstreets?



Answer:

Improved Safety

Less Travel Time

Economically Beneficial

Environmentally Responsible



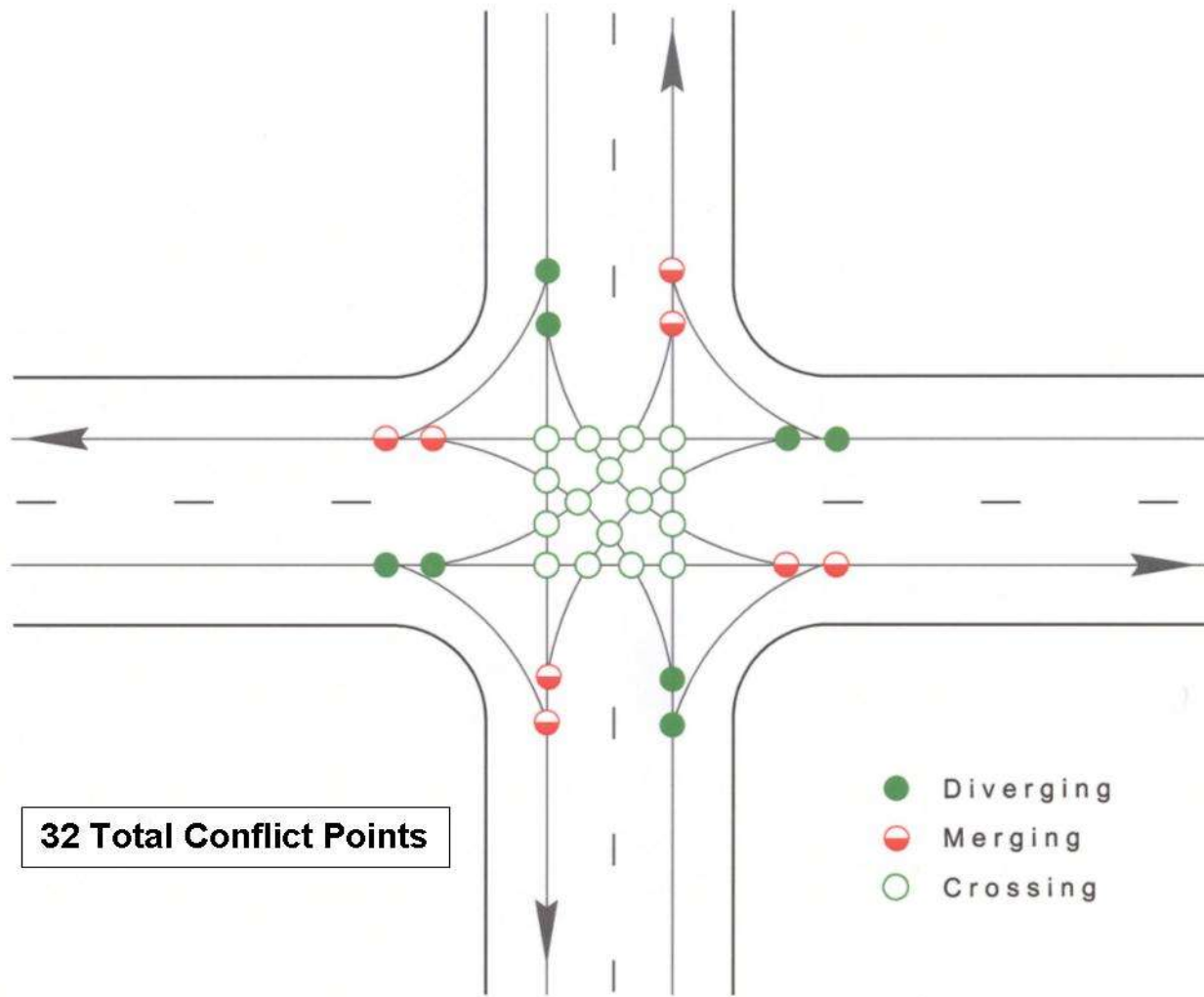
Why Superstreets?

Improved Safety

- Reduced likelihood of crashes, especially severe crashes such as side-collisions
- Fewer threats to crossing pedestrians



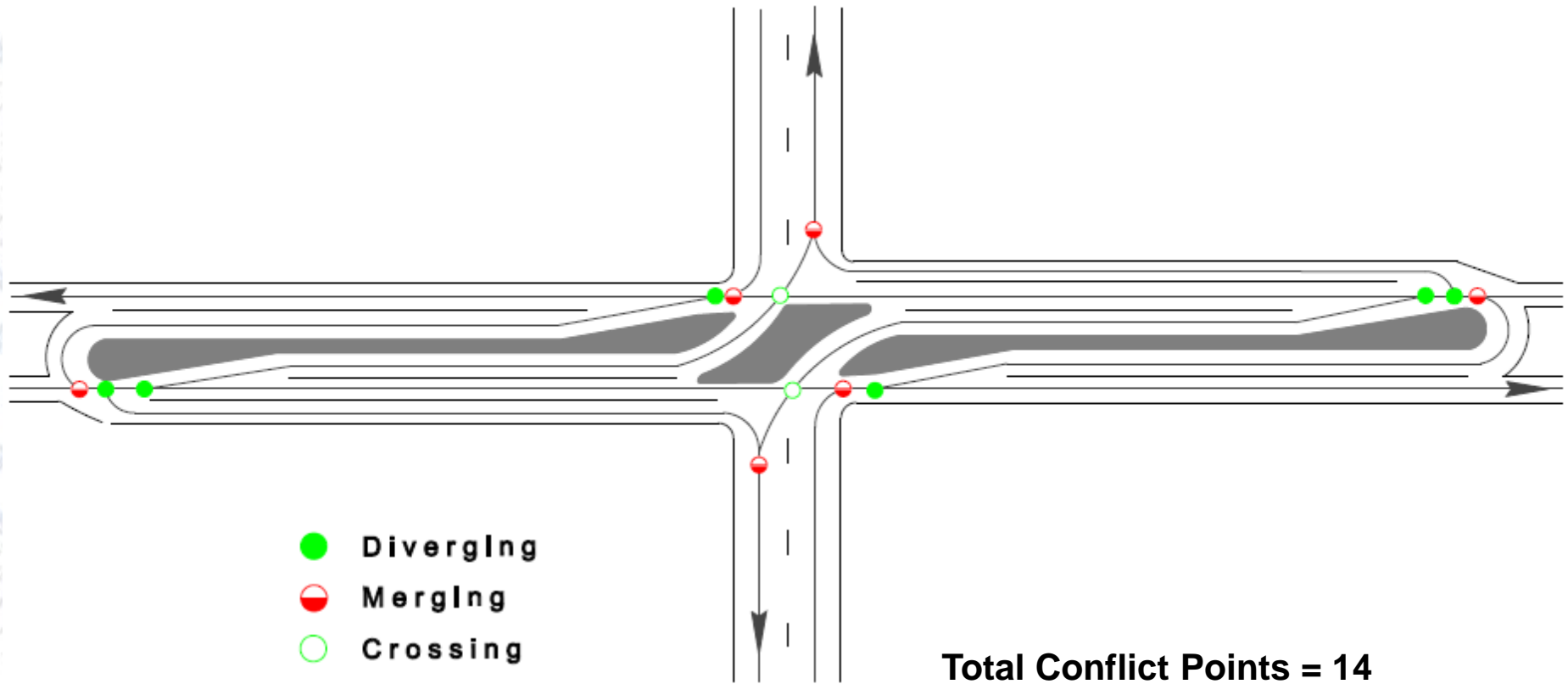
Conventional Intersection Conflict Points



Improved Safety



Superstreet Conflict Points



Improved Safety



Total Intersection Conflict Points

Conventional Intersection – **32**

16 Crossing Conflicts

Superstreet Intersection – **14**

2 Crossing Conflicts

Improved Safety



Why Superstreets?

Less Travel Time

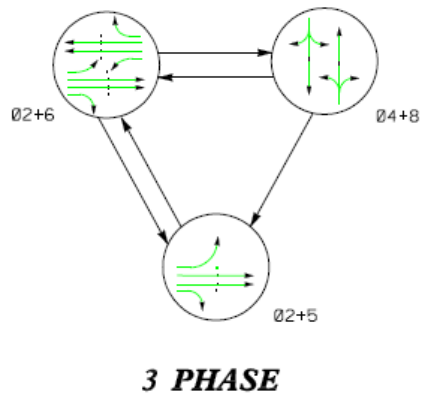
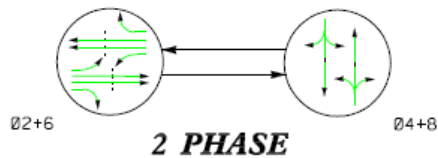
- Reduced “wait time” or delay
- Increased roadway capacity

Less Travel Time

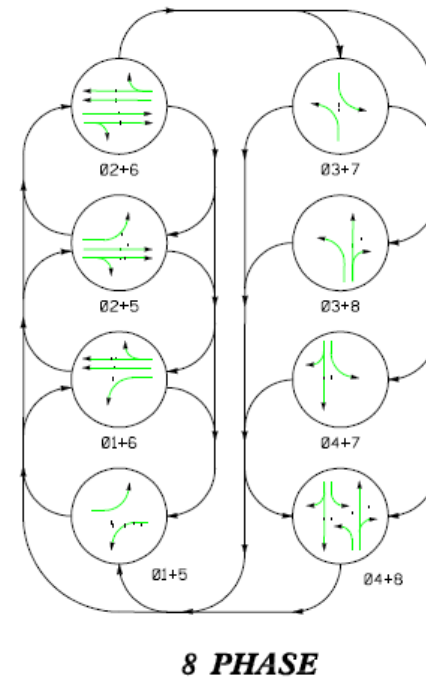


TRAFFIC SIGNAL PHASING

SIMPLE INTERSECTIONS 2 PHASE AND 3 PHASE OPERATION



COMPLEX INTERSECTION TYPICAL 8 PHASE OPERATION



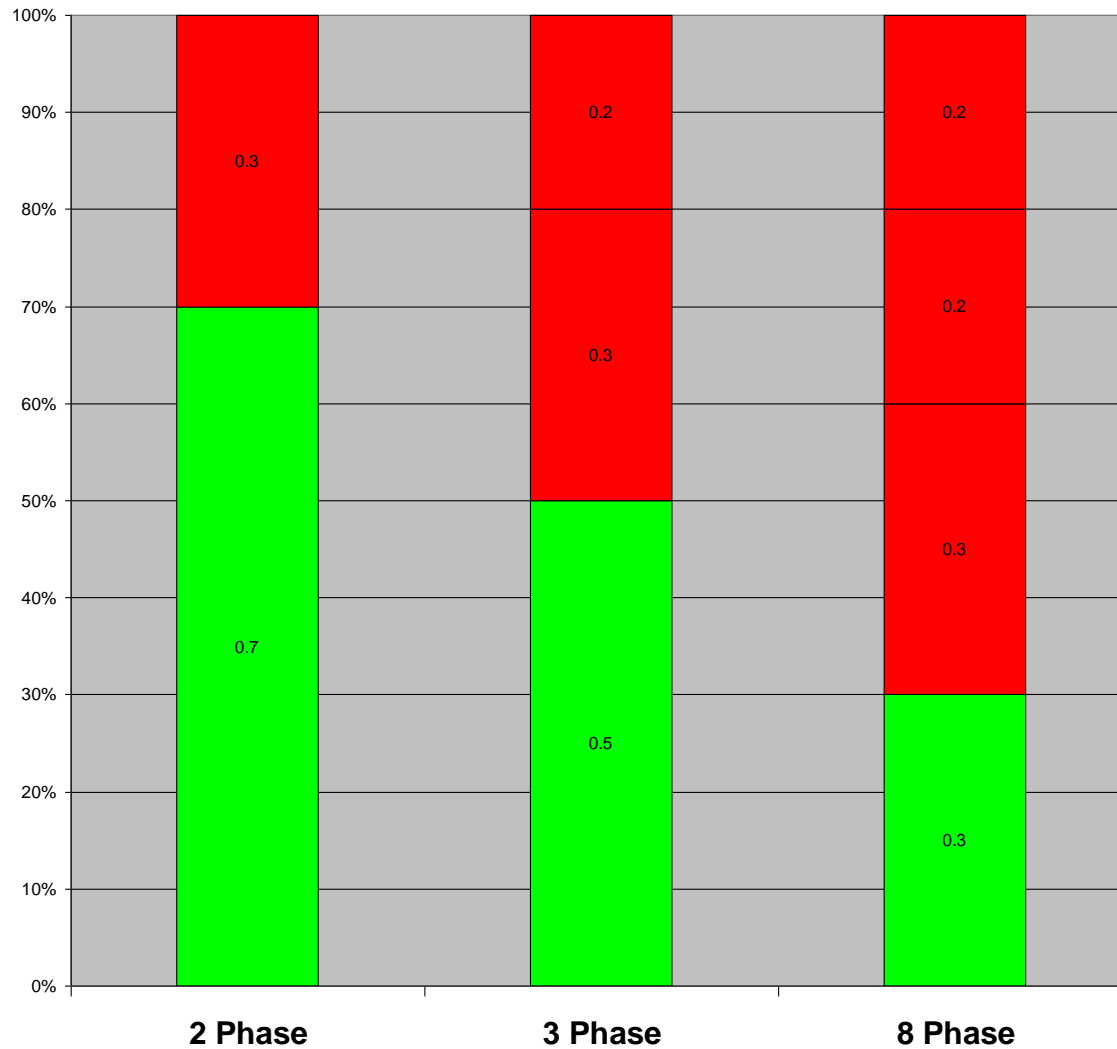
Less Travel Time



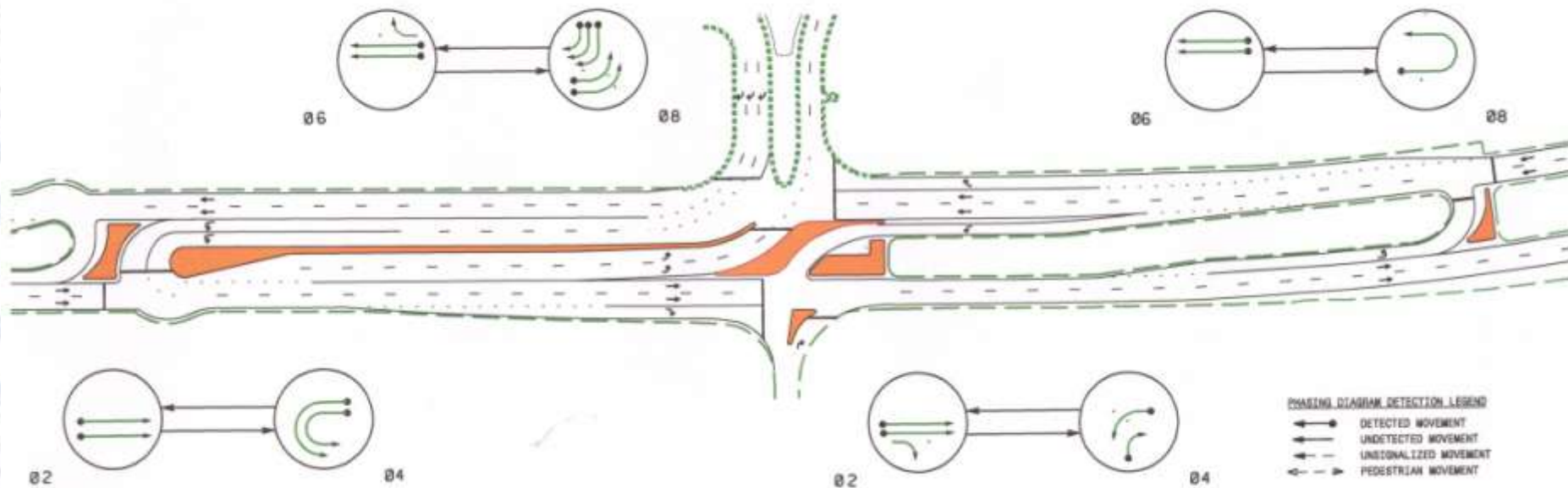
Less Travel Time

Available Green Time For One Cycle

Percent Green Time



Superstreet Phasing



Less Travel Time



Why Superstreets?

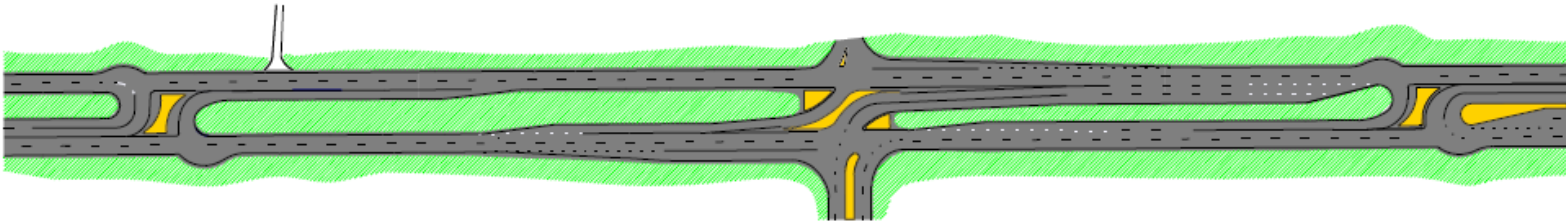
Economically Beneficial

- Preserves the existing facility
- Less expensive than an interchange
- Provides good access to both sides of the main road for development



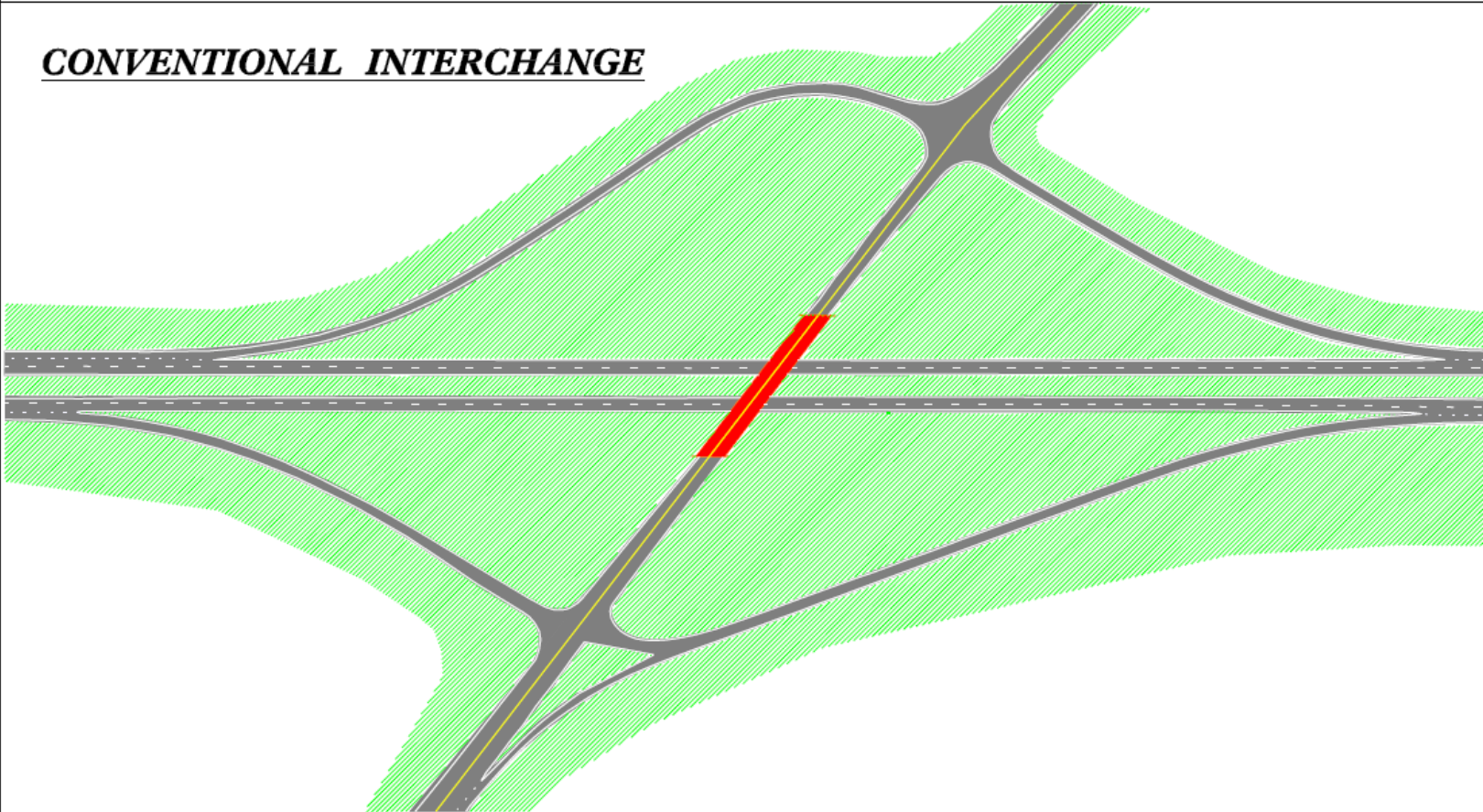
SUPERSTREET FOOTPRINT

SUPER STREET



INTERCHANGE FOOTPRINT

CONVENTIONAL INTERCHANGE



UPS Expects To Save \$600 Million Annually by Favoring Right Hand Turns



Why Superstreets?

Environmentally Responsible

- Less time spent idling at a red light
- Reduction in environmental pollutants
(exhaust fumes / fuel usage)
- Less acreage impacted by construction and permanent facility



Can Superstreets Accommodate Semi-Trailer Combinations?





ABSOLUTELY!







Unsignalized





Signalized



Superstreets in North Carolina

- US 15/501 in Chapel Hill, Orange County
- US 17 in Pender & New Hanover Counties
- US 17 in Leland, Brunswick County
- US 1 in Moore County, Vass Bypass
- US 23-74 in Haywood County
- NC 87 in Elizabethtown, Bladen County



Summary of Superstreet Benefits

- Safety
- Time savings
- Increased capacity
- Improved traffic flow
- Access management
- Land use and corridor protection
- Alternative to interchange (Less \$\$\$)
- Smaller “footprint” than an interchange





Thank You!

